MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Mail Stop 2321
Gaithersburg, Maryland 20899

SRM Number: 185h
MSDS Number: 185h
SRM Name: Potassium Hydrogen Phthalate (pH Standard)
Date of Issue: 11 November 2003

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SECTION I. MATERIAL IDENTIFICATION

Material Name: Potassium Hydrogen Phthalate (pH Standard)

Description: SRM 185h, Potassium Hydrogen Phthalate ($KHC_8H_4O_4$), was prepared to ensure high purity and uniformity. However, this SRM is certified **ONLY** as a pH standard, pH(S), not as a pure substance. A unit of SRM 185h consists of 60 g of potassium hydrogen phthalate.

Other Designations: Potassium Hydrogen Phthalate (potassium biphthalate; potassium acid phthalate; acid k; acid potassium phthalate; phthalic acid potassium salt; 1,2-benzenedicarboxy-lic acid monopotassium salt; buffer powder pH 4; monopotassium phthalate; hydrogen potassium phthalate; monopotassium 1,2-benzenedicarboxylate)

Name	Chemical Formula	CAS Registry Number
Potassium Hydrogen Phthalate	$KH_5C_8O_4$	877-24-7

DOT Classification: Not regulated by DOT

Manufacturer/Supplier: It is available from a number of suppliers.

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Component	Nominal Concentration (%)	Exposure Limits and Toxicity Data
Potassium Hydrogen Phthalate	100	No occupational exposure limits established.
		Rat, Oral: LD_{LO}: 3200 mg/kg

SECTION III. PHYSICAL/CHEMICAL CHARACTERISTICS

Potassium Hydrogen Phthalate
Appearance and Odor: colorless to white crystals; odorless
Relative Molecular Mass: 204.22
Specific Gravity (water=1): 1.6
Melting Point: decomposes
Vapor Pressure (°C): not applicable
Water Solubility: 10 %
Solvent Solubility: slightly soluble in alcohol

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: Combustible **Method Used:** Not Available **Autoignition Temperature:** Not Applicable

Flammability Limits in Air (Volume %): **UPPER:** Not Applicable
LOWER: Not Applicable

Unusual Fire and Explosion Hazards: This material is a moderate fire hazard when exposed to heat or flame. Dust/air mixtures may ignite or explode. This material is a fire and explosion hazard with oxidizing materials.

Extinguishing Media: Use extinguishing media that is appropriate to the surrounding fire.

Special Fire Procedures: Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) when this material is involved in a fire.

SECTION V. REACTIVITY DATA

Stability: **X** **Stable** _____ **Unstable**

Conditions to Avoid: Avoid heat, sparks, flames, and other sources of ignition; avoid contact with incompatible materials.

Incompatibility (Materials to Avoid): Potassium hydrogen phthalate is incompatible with oxidizing materials.

See Section IV "Fire and Explosion Hazard Data".

Hazardous Combustion Products: Thermal decomposition of potassium hydrogen phthalate may produce oxides of carbon.

Hazardous Polymerization _____ **Will Occur** **X** **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: X **Inhalation** X **Skin** X **Ingestion**

Health Hazards Acute and Chronic
Inhalation of pure potassium hydrogen phthalate may cause irritation. Contact with the skin may cause irritation; repeated exposure many cause dermatitis. Exposure to the eye may cause irritation with redness and pain; repeated exposure may cause conjunctivitis. Ingestion may cause nausea, vomiting, and diarrhea.

Medical Conditions Generally Aggravated by Exposure: None Reported

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs		X
By the Occupational Safety and Health Administration (OSHA)		X

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Watch for chemical irritations and treat them accordingly. Obtain medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance immediately.

Inhalation: If inhaled, move the victim to fresh air. If breathing is difficult, give oxygen; if the victim is not breathing, give artificial respiration by qualified personnel. Obtain medical assistance immediately.

Ingestion: If ingested, wash out mouth with water. Obtain medical assistance immediately

TARGET ORGAN(S) OF ATTACK: Not Available

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released: Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away. Isolate hazard area and deny entry.

Waste Disposal: Follow all federal, state, and local laws governing disposal.

Handling and Storage: Provide general and local explosion-proof ventilation. Provide approved respiratory apparatus for non-routine or emergency use. Use an approved filter and vapor respirator when the vapor or mist concentrations are high. Wear splash proof resistant safety goggles with face shield. An eye wash station and washing facilities should be readily available near handling and use areas.

> **NOTE:** Contact lenses pose a special problem; soft lenses may absorb irritants and all lenses concentrate them. **DO NOT** wear contact lenses in the laboratory.

SRM 185h is stable when stored in its original container, with the cap tightly closed, in a dry environment, and under normal laboratory temperatures.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: MDL Information Systems, Inc., MSDS *Potassium Hydrogen Phthalate*, 19 March 2003.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified values for this material are given on the NIST Certificate of Analysis.